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# ACTIVITIES OF THE UNITED NATIONS SYSTEM IN THE FIELD OF WATER AND MINERAL RESOURCES, AND INTER-AGENCY COORDINATION

## Technical cooperation activities of the United Nations system in the mining sector

## Report of the Secretary-General

SUMMARY

The present report has been prepared in response to Economic and Social Council decision 1993/302. The report describes and summarizes the technical cooperation activities of the United Nations system in the mining sector. In so doing, it pays particular attention to projects aimed at enhancing the capacity of developing countries and countries in transition (a) to develop effective foreign investment policies and negotiate mining agreements and (b) to develop and implement adequate social policies to respond to the ongoing trend towards privatization of the mining sector. The report also discusses activities of the United Nations system in disaster prevention and mitigation in developing and utilizing mineral resources.

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## INTRODUCTION

1. The Economic and Social Council, in its decision 1993/302, and upon the recommendation of the Committee on Natural Resources at its first session, from 29 March to 8 April 1993, requested the Secretary-General to submit to the Committee at its second session a report on the technical cooperation activities of the United Nations system in the field of mineral resources. 1/ The Committee recommended that the report pay special attention to projects aimed at enhancing the capacity of developing countries and countries in transition (a) to develop effective foreign investment policies and negotiate mining investment agreements and (b) to develop and implement adequate policies to respond to the ongoing trend towards privatization of the mining sector. The Committee also recommended that the report include disaster prevention and mitigation in developing and utilizing mineral resources.

2. Contributions to the present report have been provided by the United Nations Conference on Trade and Development (UNCTAD), the Economic and Social Commission for Asia and the Pacific (ESCAP), and the Economic Commission for Africa (ECA).

3. The report is structured according to the Council's request. Section I summarizes the activities of the organizations of the United Nations system, according to their particular mandates, in mineral resources. Section II describes the methodology used in United Nations technical cooperation activities and how those activities are evaluated. Section III reports on technical cooperation activities to enhance the capacity of developing countries and countries in transition to develop effective foreign investment policies, negotiate mining agreements and implement policies to respond to privatization of the mining sector. Section IV reports on activities in disaster prevention and mitigation in developing and utilizing mineral resources.

## I. SUMMARY OF TECHNICAL COOPERATION ACTIVITIES OF THE UNITED NATIONS SYSTEM IN MINERAL RESOURCES

4. The mineral resource sector plays an important role in the economic growth and development of developing countries and economies in transition. The extraction and export of minerals provides countries with a valuable stream of government revenues, in both the short and the long term, through royalties and taxes, much needed foreign currency, added employment, in particular for rural workers, infrastructure investment, and the establishment of ancillary industries. Since these activities are most often carried out through foreign investment, the country also benefits from technology transfers.

5. Some minerals, particularly non-metallic minerals, may contribute quickly and inexpensively to a country's development. These minerals require less capital investment for their extraction and processing than the metallic minerals. Many non-metallic minerals also lend themselves to processing and marketing inside the country, which encourages entrepreneurship, creates local value added and leads to the improvement of regional transportation systems.

6. This positive role is the motivation supporting the involvement of the United Nations system in the financing, implementation and follow-up of technical cooperation activities in the field of mineral resources. Technical cooperation has often consisted of upstream activities of general information and data gathering. More recently, however, technical cooperation has evolved to respond to countries' more sophisticated needs for downstream activities of mineral resource sector promotion and management, including, inter alia, computerized information management, mineral policy formulation, investment promotion, environmental protection and the support of small-scale mining.

## A. Overview of United Nations bodies active in the field of mineral resources

7. Several organizations and agencies within the United Nations system, in accordance with their mandates and areas of specialization, participate in technical cooperation activities in the field of mineral resources.

### 1. United Nations Secretariat

8. The Department for Development Support and Management Services of the United Nations Secretariat is charged with, inter alia, the implementation of technical cooperation activities, in cooperation with other relevant agencies, in the field of mineral resources.

9. Other United Nations bodies involved in mineral resource technical cooperation include the regional commissions and UNCTAD. UNCTAD is mainly concerned with mineral economics and trade in primary commodities. The former United Nations Commission on Transnational Corporations, which recently merged with UNCTAD as the Programme for Transnational Corporations, assists Governments in relations with transnational corporations.

10. The regional commissions with the capacity for the execution and finance, through grants, of technical cooperation assistance in regional projects include ECA, the Economic Commission for Africa (ECA), the Economic Commission for Europe (ECE), the Economic Commission for Latin America and the Caribbean (ECLAC), ESCAP and the Economic and Social Commission for Western Asia (ESCWA). Among these, ESCAP and ECA are particularly active in the field of mineral resource development.

### 2. United Nations programmes

11. United Nations programmes participate in technical cooperation in primarily a financing capacity. The programmes involved in the field of mineral resources are the United Nations Development Programme (UNDP), which finances technical cooperation activities in all aspects of mineral resource development, the United Nations Environment Programme (UNEP), which finances mineral resource activities related to environmental protection, and the United Nations Revolving Fund for Natural Resource Exploration, which was established to provide an additional source of exploration financing for countries not adequately covered

by other sources. The unique feature of the Fund is that recipient Governments are required to return a small percentage of the gross annual revenues from a successful venture as a replenishment contribution.

### 3. Specialized agencies and the International Atomic Energy Agency

12. The specialized agencies and the International Atomic Energy Agency (IAEA), have both financing and executing capacities in conducting technical cooperation activities. The United Nations Educational, Scientific and Cultural Organization (UNESCO) provides assistance for formal academic training, the establishment of schools of geology, and certain research programmes. The United Nations Industrial Development Organization (UNIDO) assists in developing mineral-based industrial processing operations. The International Labour Organization (ILO) participates in technical cooperation relating to work conditions and worker safety in mineral resource extraction, encompassing all levels of mining. IAEA is involved in the regulation of and giving limited assistance for the exploration of nuclear raw materials. Lastly, the World Bank and its affiliate, the International Finance Corporation, provide grants and soft loans for technical cooperation activities and project financing.

## B. Department for Development Support and Management Services

13. The Department for Development Support and Management Services (formerly the Department of Economic and Social Development) of the United Nations Secretariat is the principal United Nations office responsible for executing and coordinating technical cooperation activities in the field of mineral resource development.

14. The main objective of the Department in the field of mineral resources is mineral resource planning and management, using means appropriate to the countries concerned. To achieve this objective, the Department has engaged in technical cooperation activities carried out in the context of country-specific projects and short-term advisory services, providing assistance in training, capacity strengthening, institution building and institutional reform. These activities cover the entire range of mineral development, planning and management; the Department's technical expertise addresses, inter alia, exploration, evaluation and feasibility studies, mining and ore processing, investment promotion and marketing.

15. Since the early 1980s, the Department has directed its efforts towards enhancing the investment appeal of developing countries by improving their legal framework in order to attract new sources of finance for developing their mineral resources. Efforts are also being directed towards raising environmental awareness, emphasizing sound environmental management of mineral development and encouraging the study and reconsideration of small-scale mining in terms of local entrepreneurship and rural poverty alleviation. Activities of the United Nations in the field of small-scale mining are described in a separate report (E/C.7/1994/9).

16. During the first two decades after 1959, when the United Nations began technical cooperation activities in the field of mineral resources, the majority of the projects were in mineral exploration, including regional geochemical and airborne geophysical surveys, followed by localized, detailed geological evaluation. Technical assistance was provided mainly to developing countries with little previous mining experience and also to countries with centrally planned economies where investment was unattractive or forbidden to private companies. Most often the projects were of a grass-roots nature and were located in remote areas with little or no infrastructure.

17. Exploration activities have contributed to the discovery of deposits whose reserves have been valued at billions of dollars. A few of the major discoveries include porphyry copper deposits in Mexico, Panama and Malaysia, gold deposits in the United Republic of Tanzania, Haiti and Mali, tin-tungsten deposits in Burma, lead-zinc deposits in Burkina Faso, and nickel deposits in Burundi and the United Republic of Tanzania. 2/ Exploration activities have also led to the identification of significant reserves of non-metallic industrial minerals including discoveries in Togo, Somalia, Pakistan and Paraguay. 3/

18. During the past 10 to 15 years, requests for technical cooperation assistance have been evolving to activities that prepare countries for attracting and receiving foreign investment. These include, inter alia, facility building and information management, mineral policy development, investment promotion, and negotiation assistance and agreement monitoring. In all of these activities, capacity-building is a major area of emphasis.

19. Facility building and information management assistance has been in the form of strengthening laboratory capacity to support field activities and future mining activities, the establishment and organization of a document centre to provide information related to the country's mineral industry in a form accessible to potential investors, and the establishment of a computerized database system for rapid and convenient access to the country's geotechnical information.

20. Mineral policy activities emphasize the assessment and revision of the investment framework to bring it into accordance with the desires of the host country Government, taking into consideration the views and desires of potential investors. These activities include assistance in formulating a mineral resource policy and development plan that identifies and establishes the Government's objectives. These objectives can then be integrated into the country's regulatory and fiscal structure through assistance in drafting new mineral legislation. Recent and current activities of the Department for Development Support and Management Services in this area are included in section III of the present report.

21. Several developing countries have revised their regulatory and fiscal structure so as to make it more conducive to foreign investment. Along with these revisions have come requests for assistance in investment promotion. This often entails the preparation of an extensive and detailed investment prospectus. Other aspects of investment promotion conducted by the Department are market studies of prospective investors, public relations work to improve

the international perception of the country's investment climate, and organization of promotional meetings with mining companies.

22. Once a country has found potential mineral investors, the Department often assists in investment negotiations and agreement monitoring. The Department has built up considerable expertise in assisting Governments and state enterprises to negotiate investment arrangements such as mineral exploration agreements, joint ventures and direct foreign investment agreements, as well as in training a country's nationals in negotiation skills and practices. Recent and ongoing technical assistance activities in the negotiation of mining agreements are discussed in section III.

## C. United Nations Conference on Trade and Development

### Activities of the Minerals and Metals Branch relevant to technical cooperation in the mining sector

23. The statistical activities of UNCTAD relating to minerals and metals include the following recurrent publications:

(a) Annual and quarterly statistical bulletins on tungsten and tin; annual and, with the assistance of a trust fund, quarterly statistical publications on iron ore; and annual statistics on bauxite/alumina/aluminium (all the issues for 1993 have been published);

(b) The Monthly Commodity Price Bulletin, which includes prices and indexes in nominal and real terms for major minerals and metals;

(c) The Commodity Yearbook, which includes time-series on production, consumption and international trade of major minerals and metals.

24. In addition, the UNCTAD secretariat is preparing a multi-country comparative statistical analysis on minerals and metals, as well as a Minerals and Metals Yearbook, which it envisages to start publishing, resources permitting, as of 1994.

25. In the area of improved efficiency and use of existing mechanisms for the management of risks arising from commodity price fluctuations, addressed by the Committee on Natural Resources at its first session under agenda item 11, the UNCTAD secretariat has issued a survey of commodity risk management instruments (UNCTAD/COM/15, 15 March 1993), covering hedging through futures or options, swaps and commodity price-linked bonds and loans, as well as a report on technical and regulatory conditions influencing participation in, and usage of, commodity exchanges by both buyers and sellers of commodities (UNCTAD/COM/16, 22 April 1993). UNCTAD has also prepared an analysis of ways of improving the efficiency and use of existing mechanisms for the management of risks arising from commodity price fluctuations (TD/B/CN.1/10, 27 August 1993). These documents were discussed by a Group of Experts on Commodity Exchanges convened by the Secretary-General of UNCTAD in May and September 1993 to look at the role of future markets in the pricing of commodities. The proposals of the Group of Experts (TD/B/CN.1/10/Add.1, 27 September 1993) will be considered by the UNCTAD

Standing Committee on Commodities at its second session, scheduled to be held from 31 January to 4 February 1994.

26. Concerning fostering sustainable development in the commodity field and reducing excessive dependence on primary commodities, paragraph 38.26 of Agenda 21 refers explicitly to UNCTAD. It states that UNCTAD "should play an important role in the implementation of Agenda 21, ... taking into account the importance of the interrelationships between development, international trade and the environment and in accordance with its mandate in the area of sustainable development". 4/

27. The Trade and Development Board has pursued this matter, in accordance with the mandates given to UNCTAD by the Cartagena Commitment and by Agenda 21 itself. The Board has established a work programme responding to these mandates for its own sessional committee charged with examining sustainable development issues, and under the Board's overall authority, work programmes have been established to implement relevant provisions of these mandates in the Board's subsidiary bodies. In this context, the Standing Committee on Commodities has agreed on a work programme that singled out sustainable development as one of its four priority areas. The work programme contains the following elements relevant to the implementation of Agenda 21:

(a) Analysis of national experiences in the management of natural resources with regard to commodity production;

(b) Exploration of the links between commodity policies, use and management of natural resources and sustainable development;

(c) Identification of environmental problems that are specific to commodity production and processing and examination of ways of improving developing countries' access to international financial and technical support, including environmentally sound technologies to cope with such problems;

(d) Identification of means by which the competitiveness of natural products with environmental advantages could be improved;

(e) Examination of the manner in which prices of natural commodities and their synthetic competitors could reflect environmental costs.

28. Under a project on natural resource management and sustainable development (INT/92/A06), a number of country/commodity case-studies on the links between socio-economic conditions, policies affecting natural resource use and environmental effects are being carried out. Mineral commodities to be studied include bauxite/alumina/aluminium in Brazil, Indonesia and Jamaica, gold in Ghana, Zimbabwe and a third country to be decided and copper (countries yet to be decided). The case-studies focus on how, and to what extent, countries have integrated environmental concerns and natural resource management issues in their policies and planning procedures affecting the commodity sector. After completion of the studies, a seminar will be held in order to draw generalized conclusions. In this context, particular attention will be paid to practical recommendations concerning technical assistance needs, including human resource

development, and to establishing a basis for regular exchange of experiences among countries.

29. Under a regional project concerning the Asian/Pacific region (RAS/92/034), an inventory of environmental legislation and practices concerning the mining and metals industries in selected countries in the region has been carried out. This inventory will form the basis for a seminar to be held in 1994. The seminar will review and compare legislation and problems in the countries concerned, assess practices and identify additional technical assistance needs, in particular training.

30. In the context of the project on the role of the mineral sector in the development process in developing countries, entitled "MINDEV" (INT/87/A05), which has grouped various activities of the UNCTAD secretariat relating to the mineral sector during the past few years, a conference on development, environment and mining will be held in Washington, D.C., in June 1994. The conference is being organized in cooperation with UNEP, the World Bank and the International Council on Metals and the Environment. The purpose of the conference is to examine the actual and potential role of the mining and metallurgical industries in meeting the developmental and environmental objectives of societies, notably in developing countries, and to increase the understanding of some important issues underlying the concept of sustainable development as applied to mining. Issues to be addressed include the following: management of mineral economies; public and private sector roles; environmental management in industry; government roles in environmental protection; investment, taxation and profits; information on mineral resources; and environmental liability and site rehabilitation.

31. Under the same "MINDEV" project, the UNCTAD secretariat has undertaken a number of country case-studies (Chile, Dominican Republic and Peru; Morocco and Zimbabwe; and Australia, Indonesia and Sri Lanka), as well as other general studies on structural changes in the world mineral industry, mineral rents, and macro-economic aspects of resource-based growth. The following studies have already been issued or will be issued during 1994:

(a) "Mineral resources and sustainable development" (TD/B/CN.1/16, 27 September 1993);

(b) "Trade and industrial policy for sustainable resource-based development; policy issues, achievements and prospects", prepared for UNCTAD by Richard Auty and David Evans, to be issued in the UNCTAD/COM series in early 1994;

(c) "The mineral sector in Peru", to be issued in the UNCTAD/COM series, in early 1994;

(d) "Structural changes in the world minerals industry during the 1980s", to be issued in the UNCTAD/COM series in early 1994;

(e) "The future of mining countries: new strategies or new Governments?", prepared for UNCTAD by Oliver Bomsel, to be issued in the UNCTAD/COM series in early 1994.

32. The work programme of the Standing Committee on Commodities includes as one of its priority areas activities aimed at reducing excessive dependence on primary commodities, including the analysis of national experiences in horizontal and vertical diversification and examination of the best ways of achieving diversification. A report has been issued by the UNCTAD secretariat in this regard entitled "Analysis of national experiences in horizontal and vertical diversification, including the possibilities for crop substitution" (TD/B/CN.1/14, 14 September 1993) and will be considered by the Standing Committee on Commodities at its January 1994 session.

33. Finally, UNCTAD is in the process of designing and implementing a database for major minerals and metals. In this respect, reference should be made in particular to the UNCTAD MICAS project, a computer-based commodity analysis and information system for worldwide distribution. A pilot scheme is near finalization for bauxite/alumina/aluminium.

## D. Economic and Social Commission for Asia and the Pacific

34. ESCAP has been actively involved in the promotion of regional cooperation in mineral resource development and management. Activities during the biennium 1992-1993 focused on (a) planned mineral resource exploration and development and responsible land-use, through training, exchange of information, technical advice, strengthening of relevant national and regional institutions, preparation of reviews, studies and maps on geology and land-use, mineral resource potential, and mineral economics and trade, and (b) advisory services in the formulation of national policies, strategies and programmes for the development of mineral resources and land-use, including the review of mining codes and related legislation and the promotion of foreign investment.

35. The secretariat provided technical backstopping to intergovernmental organizations within the region such as the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas, the South Pacific Applied Geosciences Commission, the Southeast Asia Tin Research Centre, and the Indian Ocean Marine Affairs Cooperation. Inter-agency coordination with the United Nations Revolving Fund for Natural Resource Exploration for an exploration project in Viet Nam and an offshore mineral exploration programme in Sri Lanka was actively pursued. Backstopping is also being provided to the Department for Development Support and Management Services in the execution of the mineral law project in Viet Nam, co-financed by the Australian International Development and Aid Bureau. Administrative support in implementation of the Department project in Thailand entitled "Technical assistance to potash mining and development in north-east Thailand" was also provided.

36. Consequent to the implementation of ESCAP resolution 48/2 of 23 April 1992 on restructuring the conference structure of the Commission, the Committee on Natural Resources at its first session stressed the need to harmonize the activities related to mineral resources in accordance with chapter 10 of Agenda 21. This approach should encompass (a) management-related activities, including relevant policy instruments and appropriate tools, (b) activities for strengthening information systems and (c) activities in regional and international cooperation.

37. The systematic regional knowledge of mineral resources has been one of the primary objectives of the ESCAP secretariat. To this end, the secretariat has assisted member countries in the compilation of national atlases of mineral resources since 1985. The countries covered so far are Bhutan, the Lao People's Democratic Republic, Malaysia, New Zealand, Nepal, the Republic of Korea, Solomon Islands, Sri Lanka and Viet Nam. Each atlas consists of an explanatory brochure in English, with two atlas sheets comprising the geological map and mineral resources map. These atlases provide an essential overview to the international mining companies for assessing the geological potential for detailed exploration and investment in mining.

38. ESCAP has initiated action to establish a mineral information system under a UNDP-funded project on economic restructuring and international trade in the mineral commodities sector. The database was specifically designed for use by earth scientists, mining engineers and government policy makers. Collaboration with UNCTAD has allowed the incorporation of relevant sections of the UNCTAD MICAS system, a computer based commodity analysis and information system for worldwide distribution currently under development. The ESCAP database is functional in six countries, namely, Bhutan, Nepal, the Philippines, Sri Lanka, Thailand and Viet Nam. Consultants have installed the ESCAP-donated hardware and software and provided training to national staff in the use of the system.

## E. Economic Commission for Africa

39. The sustainable development of mineral resources in the African region will increasingly entail the integration of African mining industries with other socio-economic sectors at the national, subregional and regional levels so that the requirements of the African mining industries will be derived from within the region, and the outputs of the mining industries will be used as inputs to other industries within the African region. This development process is likely to accelerate the production of mineral raw materials and mineral-based products in the region, increase intra-African trade in mineral raw materials and mineral-based products, and expand the range of goods and services required to alleviate the extreme poverty existing in the African region.

40. Towards the above general objectives, the ECA secretariat continues to prepare publications, research materials, seminars and conferences for African technical experts and policy makers, intergovernmental organizations, the operating mining industries, the private sector, including relevant transnational corporations, research institutions and other relevant bodies, in order to promote appropriate mineral development policies and programmes in the African region.

41. During the biennium 1992-1993, special emphasis was placed on subjects related to the physical, economic and social environment and mineral resource development in Africa; small-scale mining giving priority to precious metals and minerals and construction materials; and mineral development policies in the region, culminating in the organization of the Fifth Regional Conference on the Development and Utilization of Mineral Resources in Africa in November 1993. The general theme of the conference was mineral resources development and the Environment in Africa, covering topics related to the protection of the physical

environment against damage in the process of mineral development, political and economic factors affecting the development of mineral resources, and the roles of minerals in meeting socio-economic needs in the African region.

42. In the coming 1994-1995 biennium, the ECA secretariat will continue its activities in the promotion of harmonized mineral development policies and investment by the private sector in the mineral industries of Africa; promotion of the integration of African mining industries with other socio-economic sectors at the national, subregional and regional levels; preparation of research materials and publications intended to promote the sustainable development of mineral resources in Africa; and organization of workshops, study tours and conferences intended to enhance the development and utilization of mineral resources in the region. The ECA secretariat is, for example, currently undertaking a joint study with the secretariat of UNIDO concerning prospects for increased intra-African manufacturing and trade in copper and aluminium-based products; the African copper and aluminium industries have expressed great interest in the study, which is likely to facilitate the industrial development of the region to produce metal products for consumption in the African economy.

43. While the ECA secretariat acknowledges the valuable collaboration that exists between the Secretariat and other United Nations bodies in providing technical assistance and support to African countries and institutions in their efforts to develop their mineral resources, it should be emphasized that expanded United Nations system-wide collaboration and coordination in programme conception and implementation may improve the impact of these technical cooperation programmes.

## II. METHODOLOGY AND EVALUATION OF UNITED NATIONS TECHNICAL COOPERATION ACTIVITIES

44. The United Nations organizations and agencies involved in mineral resource development follow the comprehensive methodological and evaluatory approach to technical cooperation initiated by the United Nations system.

### A. Methodology

45. The primary objective of the operational activities of the United Nations system, in accordance with General Assembly resolution 43/199, is "to promote the self-reliance of developing countries through multilateral cooperation". To promote this self-reliance, United Nations technical cooperation projects emphasize capacity-building and training of national personnel of the host Government. This includes, inter alia, financing expenses for attendance at workshops, seminars and conferences, for university courses and for sending technical advisers for on-site training.

46. Projects are carried out and monitored through a tripartite mechanism made up of representatives from the recipient Government, the United Nations implementing or associated agency involved and the United Nations funding agency, which is usually UNDP.

47. Overall project management was traditionally undertaken by the executing agencies. However, as a result of General Assembly resolution 44/211 on operational activities and national execution, more and more country projects are being managed, whenever feasible, by host country Governments, as over time many of them have developed the management and administrative capacity to do so. This is consistent with the United Nations policy that all development programmes and projects are nationally owned, directed and controlled, and that the establishment of priorities, achievement of development objectives and sustainability of results produced are the responsibility of the Government.

48. In addition to promoting self-reliance and national execution, United Nations organizations and agencies, under the coordination of UNDP, emphasize establishing long-term relationships. One motivation behind this is to give continuity to the technical cooperation activities taking place in the country in question and avoid disjointed, overlapping or even contradictory short-term projects. Another motivating factor is that the commitment and trust established in a long-term relationship is conducive to the overall efficiency and effectiveness of technical cooperation activities. It reduces the time and resources necessary to become familiar with the developing country's institutions and personnel and ensures an optimal level of cooperation between the United Nations agency and host government officials.

49. The principal source of financing for technical cooperation assistance is UNDP, which provides financing to technical cooperation projects from country indicative planning figures (IPFs). UNDP has recently established a new funding facility to implement project financing - Technical Support Services at the programme level (TSS-1) and Technical Support Services at the project level (TSS-2).

50. The main purpose of the TSS-1 facility is to contribute, inter alia, to achieving a sharper technical focus by agencies and to improving agency capacities for technical support to developing countries in the upstream stages of programme and project cycles, including the provision of sectoral policy advice to Governments and the formulation of subsectoral and cross-sectoral strategies and programmes. Technical services to be financed by TSS-1 are to include those necessary for carrying out significant sectoral and subsectoral studies at the country and intercountry level, the formulation of sectoral programmes, participation in national technical cooperation assessments and programmes, and thematic evaluations.

51. Given the emphasis on national execution mentioned above, it is essential that projects approved for national execution be appropriately monitored and supported. This is one of the main reasons for the establishment of the TSS-2 facility by the Governing Council of UNDP as part of the new support costs arrangements. TSS-2 financing, however, is available only in sectors represented by the five bodies subject to the new regime of support costs, namely, the Department for Development Support and Management Services, and the Food and Agriculture Organization of the United Nations, and for obtaining services from them.

52. Recently, the funding of technical cooperation in the mineral resource sector has become a critical issue. The pledged contributions to UNDP for 1994

are expected to remain at the same level as for 1993, at $920 million, which is $340 million below the 1994 target of $1.26 billion projected by the Governing Council of UNDP. This has already caused an across-the-board reduction in programme spending of 25 per cent, when compared with original projecting. In addition, UNDP has been faced with increasing demands to finance technical assistance from other sectors, such as humanitarian and disaster relief assistance.

53. Together, these two effects have meant less funds with which to finance mineral projects, and this reduction has not been offset by other sources of financing, such as cost-sharing by the host Government or funding from other development agencies. Owing to these reductions of projected and available funding, many requests from developing countries for advisory services and country projects have had to be postponed or delayed.

## B. Evaluation

54. Another important aspect of the United Nations approach to technical cooperation is its evaluation system. Technical cooperation projects are evaluated through the tripartite mechanism, by internal and external evaluators in order to ensure that the objectives of the projects are met and that the projects are carried out effectively. Projects are also subject to management audits to verify that resources are used efficiently and appropriately.

55. Internal evaluations consist of an internal evaluation report, prepared once a year by the project team during each year of the project, and an annual tripartite review meeting. Using the evaluation report as a basis, the evaluation meeting covers the work carried out to date, confronts any problems faced in the operations of the project and decides upon any action or corrective measures that need to be taken. A terminal tripartite review meeting also takes place at the end of the project to give a final evaluation and make recommendations for future work.

56. External evaluations are normally conducted by a team of independent consultants, representing each member of the tripartite relationship. In the case of a nationally executed project, however, the team is reduced to two evaluators, one representing the Government and one representing the financing agency. External evaluations take place mainly in the field, and are either mid-term (conducted during the operation of the project), terminal (conducted just before or upon completion), or ex-post (carried out two years or more after the end of project implementation).

57. Mid-term evaluations check the continuing relevance of the project to the country's development objectives, the results of the activities already implemented in comparison to the work plan, the effectiveness of the technical approach used in producing those results, the cost-effectiveness of the project strategy, and the performance of project inputs. Mid-term evaluations serve as an important corrective mechanism, diagnosing problems and recommending the necessary corrections to ensure that the project is effectively carried out.

58. Terminal evaluations, on the other hand, are an assessment of the overall performance of the project, focusing on the results as achieved and their effectiveness, impact and sustainability. Evaluators assess and document positive and negative economic and social effects, identify the reasons behind those effects and search for ways to avoid the negative and promote the positive in future projects of a similar nature, assess the cost-effectiveness of the activities taken, and provide recommendations for follow-up activities, such as an extension of a project or its replication within or outside the country.

59. Ex-post evaluations are designed to measure the impact of a project and the sustainability of its results, where the central concern is the capacity and the performance of the recipient organization in achieving its mandate. Ex-post evaluations require an interactive dialogue with the end-users to assess the real impact of the project.

60. In addition to evaluations, projects are also subject to audits by United Nations auditors to ensure the efficient and effective use of resources. The auditor's report assesses the project's management, focusing on the financial aspects of the project and the relationship of inputs to outputs. Within this framework, auditors also discuss issues such as project formulation and project effectiveness.

## III. TECHNICAL COOPERATION ACTIVITIES TO ENHANCE THE CAPACITY OF DEVELOPING COUNTRIES AND COUNTRIES IN TRANSITION TO PLAN AND MANAGE MINERAL RESOURCES BY, INTER ALIA, DEVELOPING EFFECTIVE FOREIGN INVESTMENT POLICIES, NEGOTIATING MINING AGREEMENTS, AND DEVELOPING AND IMPLEMENTING POLICIES TO RESPOND TO PRIVATIZATION IN THE MINING SECTOR

61. During the past decade, many developing countries have reassessed their mineral resource development strategies and objectives. Whereas previously they had discouraged foreign investment in favour of developing their mineral resource sectors through State-owned and operated mining industries, many are now choosing to develop their mineral resources by encouraging foreign investment and, in some cases, seeking to privatize their State-owned mining companies. This has resulted in increased requests from developing countries for United Nations technical expertise to assist in the formulation and design of foreign investment policy and regulatory and tax legislation which are both attractive to investors and acceptable to Governments, and to assist in negotiating terms and conditions of foreign investment with potential investors. Requests are also received for assistance in developing and implementing policies to respond to mining sector privatization; these requests, however, are fewer in number.

### A. Technical cooperation activities in mineral resource policy development

62. There are difficulties in the formulation of mineral policy and law for many developing countries and economies in transition. Often, officials at the

highest levels of government express their commitment to mineral resource development, but the absence of administrative cohesion and the lack of commitment from individual ministries hampers decision-making and the implementation of reforms. Another obstacle, related to the first, is the lack of understanding of mining and mining investment criteria, which hinders efforts to formulate a mineral policy attractive to foreign investors.

63. Technical cooperation activities to enhance the capacity of developing countries and economies in transition to develop effective foreign investment policies begin with a definition of the country's objectives for development of its mineral resources. This includes a systematic appraisal of the country's legal framework and taxation system, infrastructure and administration, as well as an appraisal of the geological and industrial potential of the country with respect to both domestic and international demand. From these appraisals, the country is then assisted in designing a mineral development policy to fulfil its mineral development objectives, in revising its legal and tax framework to be consistent with its new mineral policy, and in developing an efficient administration system to implement the new policies.

64. The Department for Development Support and Management Services has completed several projects involving foreign investment policy development over the past two years.

65. In Malaysia, a project was completed in which officials of the Ministry of Primary Industries were assisted in developing an overall mineral development and investment policy conducive to attracting and regulating foreign mineral investment. The Ministry was also assisted in designing policy instruments, such as a national policy paper and mining code, mineral investment and tax regulations, a mineral title management system and a model mining agreement.

66. Projects of a similar nature and format have been completed in Ethiopia, Guinea-Bissau, the Philippines and Yemen. These projects have also incorporated a training component in mineral management and contract negotiation for relevant government personnel. In Guinea-Bissau, there was also a legal and organizational restructuring of the government body in charge of administering the Government's mineral policy, the General Directorate of Geology and Mines.

67. During the past decade, the Department for Development Support and Management Services has been particularly involved in Ethiopia and Yemen, executing several projects in both countries in all aspects of mineral development. One project in Yemen, the Yemeni Joint Project for Natural Resources, included an open house which was attended by 22 international and eight local mineral companies. The Yemen open house showed the attractive mineral possibilities of the country and the willingness of the Government to do business with private investors. The open house concluded with a round-table discussion in which the participants, especially those from the private sector, were invited to give their views regarding the Government's natural resource programme and mining and investment laws. Other projects in Yemen also include financing cooperation with the World Bank.

68. In Ethiopia, a project was completed in which a new mining law and new safety regulations were prepared for the recently started Lega Dembi I gold-

mine. At present, an information prospectus emphasizes the changes in Ethiopia's legal and fiscal environment and the potential for finding economic mineral deposits is being drafted. Another project includes the preparation of a comparative analysis of different types of mining investment arrangements and financing, as well as a presentation of the experiences of developing countries with respect to each type. Currently there are four separate projects being carried out in Ethiopia, one of which is being jointly funded by UNDP and the World Bank.

69. In the Philippines, the Government was assisted in drafting new mining legislation and in improving the capability of the Department of Environment and Natural Resources to promote investment from abroad and to negotiate and conclude new mining agreements.

70. The Department for Development Support and Management Services is also currently involved in technical cooperation activities that assist in foreign investment policy development.

71. In Kenya, a project started in late 1993 has as its objective the redrafting of current mineral legislation for subsequent submission by the Government to Parliament for approval. This project is the first phase of a mineral investment promotion programme in which new legislation is sought to encourage mineral investment by national and international investors for the development of base metals and industrial minerals.

72. In Burkina Faso, one of three active projects concentrates on a revision of the mining investment laws and investment promotion. Another component of this project is the training of five national administrators in negotiations with prospective mining partners and in specific problems related to international negotiations.

73. In Chad, assistance is being provided to strengthen the capacity of the Directorate of Geological and Mining Research. One objective of this assistance is a revised mining code and mining legislation, to be followed by the preparation of a promotional brochure and a special supplement on Chad to be published by a major mining journal.

74. In the Niger, an investment forum was held to introduce prospective investors to the mineral potential and investment framework of the country. The forum included presentations on the geology and gold potential of different regions and visits to potential mining areas to allow the participants to view accessibility and terrain conditions.

75. In Viet Nam, the Government requested a project to draft a mineral law that would open the country's mineral sector to foreign investment. This project is being carried out by the Department for Development Support and Management Services, with the Ministry of Heavy Industry and in cooperation with ESCAP. In addition to funding from UNDP and inputs from the Government of Viet Nam, 50 per cent of the project funding is being provided by the Government of Australia.

76. The project has two main objectives. The first is to complete a new mining law, together with implementing regulations and a model mining agreement. The second is to establish a functioning administrative framework for the effective operation of the new legislation and the sustainable development of the mining sector.

77. In addition to country projects that address mineral resource policy, another important initiative is the preparation by the Department for Development Support and Management Services of Environmental Guidelines for the Planning, Approving and Managing of Mining Operations in Developing Countries, to be published jointly with UNEP. The purpose of the Guidelines is to assist Governments with the implementation of an environmental regulatory framework that will ensure the proper priority for environmental responsibility to be incorporated in all mining industry activity. The Guidelines address, inter alia, environmental monitoring programmes, mine-site rehabilitation, pollution control, recycling and waste disposal and corporate and regulatory incentives.

## B. Technical cooperation activities in negotiating mining agreements

78. Negotiation of large-scale investment arrangements in mineral resources and mining has become a complex skill requiring a multidisciplinary approach, incorporating specialized technical, financial and legal expertise. Few Governments of developing countries and countries in transition have acquired the skills or experience necessary to negotiate large-scale transnational investment deals.

79. The United Nations has accumulated considerable expertise in preparing Governments and State enterprises to negotiate such investment arrangements. Assistance is given in such areas as appraising negotiating positions, computer-supported financial analysis of negotiating alternatives, preparation of negotiating manuals specifically for mining, bid preparation and evaluation, and direct support in negotiating with multidisciplinary financial, legal, technical and strategy teams.

80. The Department for Development Support and Management Services has recently completed three projects involving negotiating preparation or assistance. In Bolivia, assistance was provided to COMIBOL, the State-owned Bolivian Mining Corporation, in its programme of soliciting public bidding on eight State mines and four plants. Assistance included the preparation of bidding procedures, providing instruction on joint-ventures and possible joint-venture combinations for Bolivian deposits, evaluating best packages for joint-venture negotiations, negotiation instruction and technical evaluation of bids, and other geological aspects such as the evaluation of mineral resources.

81. In Jamaica, a project was completed in which the Government was able to conclude marble mining investment negotiations with local and overseas investors and make joint-venture investment decisions. Much of the assistance was to identify and remove policy and logistical constraints that were hampering the negotiations, to provide detailed technical data on the volume and quality of

available resources and to verify for the Government the terms of the incentive structure of the negotiated agreements.

82. In Burundi, the Government was assisted in negotiations with a major mining company for an exploration programme.

83. Current projects that have negotiation components, in addition to the project in Burkina Faso mentioned in section A above, are under way in the Niger and the United Republic of Tanzania. The negotiation components in all three cases are carried out by consultants who train government officials in methods for concluding mining contracts and for negotiating provisions for environmental protection. Training takes place in seminars and workshops where concrete examples of mining agreements are given, negotiation methods and techniques are presented and government officials participate in simulated negotiation sessions. During these sessions, officials practise negotiation techniques by negotiating with counterparts in the roles of both government agent and international mining investor.

### C. Technical cooperation activities in developing and implementing policies to respond to privatization of the mining sector

84. Although most privatization programmes are usually handled by banks, the Department for Development Support and Management Services is called upon to provide expertise or advice through its advisory services or in the framework of projects, such as in the project in Bolivia mentioned in section B above. Currently, TSS-1 modality funding proposals involving advisory services for assistance in mineral sector privatization and decentralization have been submitted to UNDP for approval.

## IV. TECHNICAL COOPERATION ACTIVITIES IN DISASTER PREVENTION AND MITIGATION IN DEVELOPING AND UTILIZING MINERAL RESOURCES

85. Natural and man-made disasters continue to be the cause of human suffering and material destruction on a large scale in many areas of the world. The aftermath of a disaster can be particularly difficult for developing countries and countries in transition as Governments cope with providing relief and rehabilitation - efforts that can seriously strain their national economy and government infrastructure.

86. The United Nations system responds to requests for assistance to prevent and mitigate disasters within the framework of the International Decade for Natural Disaster Reduction and General Assembly resolution 46/182. The goals for the Decade are:

(a) To improve each country's capacity to mitigate the effects of natural disasters;

(b) To devise guidelines and strategies for applying existing knowledge;

(c) To foster scientific and engineering endeavours to close critical gaps in knowledge;

(d) To develop and disseminate information on and evaluate the effectiveness of measures for assessment, predicting, preventing and mitigating natural disasters through programmes of technical assistance and technology transfer, demonstration projects, education and training.

### A. Worker safety and the application of geological expertise to natural disaster prediction and mitigation

87. In the field of mineral resources and mining, United Nations technical cooperation activities in disaster mitigation and prevention are carried out in worker safety in the mining and minerals industries and in areas where mineral resource and geological expertise and technology are applicable, such as the monitoring and prediction of earthquakes, landslides and volcanic eruptions.

88. Technical cooperation activities that promote worker safety in the mining and mineral industries are mainly implemented by ILO and are partially covered in the report of the Secretary-General on small-scale mining (E/C.7/1994/9). However, the Department for Development Support and Management Services also provides technical assistance in these areas when specifically requested or in conjunction with projects that include assistance in other areas.

89. In Malaysia, a Department for Development Support and Management Services project began in 1993 to enhance the federal Government's regulatory and administrative systems for the management of worker safety in the minerals industry, as well as to provide improved measures for environmental protection and land rehabilitation. This is being done through the hiring of international consultants to work with counterparts in federal departments charged with mineral sector regulatory responsibilities. This project, financed by UNDP, is also an example of a nationally executed project, being executed by Malaysia's Ministry of Primary Industries.

90. Mining safety regulations are also included in the drafting of mining codes in technical assistance in mineral policy development, discussed in section III.B, above.

91. As indicated in the oral report on this subject made at the first session of the Committee on Natural Resources, disaster prevention and mitigation assistance using mineral resource and geological knowledge and technology has been applied in the recent past by the United Nations system to assess ways of mitigating the effects of landslides, embankment collapse and earthquakes in Bangladesh, volcano eruptions in Nicaragua, earthquakes and landslides in Turkey, as well as to assist in establishing seismic monitoring capability in Oman.

B. Use of mineral resource exploration technology in land mine and munitions clearance

92. An extension of the geological expertise used in mineral resource exploration to disaster mitigation is being pursued in the area of land mine and munitions clearance.

93. The presence of land mines and munitions is prolonging the horrors of war in many countries and constitutes a formidable barrier to the process of reconstruction and development. Mines and munitions left in present and former conflict zones continue to maim and kill civilians, including many children, delay the resettlement of war refugees and prevent the cultivation of fertile agricultural regions. The countries most affected by this problem are Afghanistan, Angola, Cambodia, El Salvador, Iraq, Kuwait, the Lao People's Democratic Republic, Mozambique and the countries of the former Yugoslavia.

94. Of these countries, only Kuwait has the financial means necessary to undertake the expensive, labour-intensive job of mine and munitions clearance. Under the auspices of the United Nations, mine detection and clearance operations are currently under way in Cambodia and Afghanistan and are about to commence in Mozambique and Somalia.

95. The United Nations Working Group on Mine Clearance, composed of members from various Departments of the Secretariat and from United Nations agencies, has recently been organized with the objective of creating a centralized and systematic means of assisting countries in the clearance of land mines and munitions. The Group is chaired by the United Nations Demining Expert from the Department of Peace-keeping Operations, and comprises representatives from the Department of Humanitarian Affairs, the Department of Political Affairs, the Department for Development Support and Management Services, UNDP, the Office of the United Nations High Commissioner for Refugees, the United Nations Children's Fund and the World Health Organization. The Group also includes representatives from non-governmental organizations and from the International Committee of the Red Cross.

96. Currently, the geological expertise of the Department for Development Support and Management Services is being used to provide input to the Working Group's Technical Committee. Areas in which the Department expects to use its expertise and experience include the preparation of geographical maps, the identification of geophysical companies that have developed or have the potential to develop technologies and equipment for mine clearance, and the establishment of a computerized database. 5/

97. This database is to be established drawing on the experience that the Department has gained in assisting in the establishment of geological and mining databases for government mining ministries and offices. It will provide easy access to relevant information for the several United Nations departments and agencies involved. It will contain several files, including country files, a mine clearance specialist file, a technical file, a United Nations activities file, a bibliographic file, and a legal file. The information provided by the proposed database will facilitate the coordination and execution of the technical assistance of the United Nations system in this area of disaster

clearance and mitigation, particularly for the planning of activities in the early phases of mine clearance.

## V. CONCLUSION

98. The mining sector has contributed and continues to contribute to the economic growth and development of developing countries and countries in transition. The United Nations system is playing an active role in this development through the use of its accumulated experience and expertise to assist in all phases and all aspects of mineral resource development, from mineral exploration and discovery to capacity-building and investment preparation and promotion, and through the use of its technical expertise to assist in disaster prevention and mitigation.

99. In addition to promoting mineral resource development, the United Nations system is, in accordance with Agenda 21, encouraging environmental awareness and action. Environmental issues are being actively pursued, with emphasis on environmental protection compatible with mineral resource investment and development. New policies for small-scale mining are also being studied in the context of local entrepreneurship, rural poverty alleviation and safeguards for the environment.

## Notes

1/ Official Records of the Economic and Social Council, 1993, Supplement No. 8 (E/1993/28).

2/ See "Chronicle of United Nations mineral resources exploration in developing countries, 1958-1993".

3/ Ibid.

4/ Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992 (A/CONF.151/26/Rev.1 (Vol. I and Vol. I/Corr.1, Vol. II, Vol. III and Vol. III/Corr.1)) (United Nations publication, Sales No. E.93.I.8 and corrigenda), vol. I: Resolutions adopted by the Conference, resolution 1, annex II.

5/ See report of the Secretary-General on strengthening of the coordination of humanitarian emergency assistance of the United Nations (A/48/536).

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